

# Work Order ID 85793

June-15-12 10:48:19 AM

ASAP

\*85793\*

Page 1

Item ID: D4151-041

Accept

\*N900040100\*

Setup Start \*NS1\*

Revision ID:

Stop \*NS2\*

Item Name: Basket Fwd Hardpoint Assembly, Lower

Start Date: 15/06/2012 Start Qty: 12.00

\*12\*

Cust Item ID:

Required Date: 22/06/2012 Req'd Qty: 12.00

\*12\*

Customer:

Reference:

Approvals:

Process Plan: MLJ

Date: 12/06/15

Tooling:

Date:

Run Start \*NR1\*

QC:

Date:

SPC (Y/N):

Date:

Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D4151

C

100

0.00

\*100\*

Small Fab

Memo

0.00

Small Fab

1- Assemble as per dwg

6x

SP  
12/07/13

110

QC5- Inspect part completeness to step on W/O

0.00

\*110\*

QC

Memo

0.00

Quality Control

SP 103

6x

120

Identify as per dwg & Stock Location: ST 103

0.00

\*120\*

Packaging

Memo

0.00

Packaging

6x

SP  
12-7-13

**Work Order ID 85793****\*85793\***

Page 2

June-15-12 10:48:19 AM

Item ID: D4151-041

Accept

**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Basket Fwd Hardpoint Assembly, Lower

Start Date: 15/06/2012 Start Qty: 12.00

**\*12\***

Cust Item ID:

Required Date: 22/06/2012 Req'd Qty: 12.00

**\*12\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

130

QC21- Final Inspection - Work Order Release

0.00


**\*130\***

QC

Memo

0.00

Quality Control

12/7/4 

MF

12-07-04

NCR: Yes / No

## WORK ORDER NON-CONFORMANCE / UPDATE

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Supplier <input type="checkbox"/>		Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Other <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Supplier <input type="checkbox"/>																
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Other <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data									
Equip/Tooling									
Operator									
Material									
Offset/Setup									
Other									
Process									
Supplier									
Training									
Unauthorized									

### FAULT CATEGORY

Landing Gear	Hardware	General	Maintenance
<input type="checkbox"/> Bending Passes Below Min <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimp at Bending <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Other <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Ripples on Inner Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<input type="checkbox"/> Breaking <input type="checkbox"/> Missing <input type="checkbox"/> Size/Length <input type="checkbox"/> Spinning <input type="checkbox"/> Threading <input type="checkbox"/> Wrong  <b>Drill Holes</b> <input type="checkbox"/> Misaligned <input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Undersized <input type="checkbox"/> Too Many	<input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Documentation/Data <input type="checkbox"/> Finish <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Inspection Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Jigs/Fixtures/Tooling <input type="checkbox"/> Kit Incorrect <input type="checkbox"/> Kit Missing	<input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Off-Set <input type="checkbox"/> Orientation Misread <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Lost <input type="checkbox"/> Part Moved <input type="checkbox"/> Raw Material
			<input type="checkbox"/> Set-up <input type="checkbox"/> Supplier <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other

# Picklist Print

June-15-12 10:48:22 AM

Page 1

Work Order ID: 85793

\*85793\*

Parent Item: D4151-041

\*D4151-041\*

Parent Item Name: Basket Fwd Hardpoint Assembly, Lower

Start Date: 15/06/2012

Required Date: 22/06/2012

Start Qty: 12.00

Required Qty: 12.00

## Comments:

IPP Rev:A 10.06.24 new issue DD verf:EC

IPP Rev:B 10.07.22 as per revB DD verf:JLM

11.01.21 as per dwg revC DD verf:JLM

IPP Rev:C

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D4151-1 *D4151-1* Lower Hardpoint Plate		Manufactured	No			100	Each	12.0000	2	24	**	12/07/03	
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				ST103				12					
				83346				12					
D4151-5 *D4151-5* Fwd Basket Instl Stud		Manufactured	No			100	Each	6.0000	1	12	**	12/07/03	
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				ST103				6					
				83922				6					
AN4C13A *AN4C13A* BOLT		Purchased	No			100	Each	44.0000	2	24	**	12/07/03	
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				ST357				44					
				120187				1					
				121827				43					

M12241  
120

# Picklist Print

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Page 2

Work Order ID: 85793

**\*85793\***

Parent Item: D4151-041

**\*D4151-041\***

Parent Item Name: Basket Fwd Hardpoint Assembly, Lower

Start Date: 15/06/2012

Required Date: 22/06/2012

Start Qty: 12.00

Required Qty: 12.00

MS21043-4

Purchased

No

100

Each

1,181.000

2

24

**\*MS21043-4\***

**\*\***

Nut

Location

Loc Qty

Loc Code

FG

40

104603

40

ST301

1141

119546

115

120308

29

121162

497

121652

500

NAS1149C0432R

Purchased

No

100

Each

3,816.000

4

48

**\*NAS1149C0432R\***

**\*\***

Washer

Location

Loc Qty

Loc Code

ST297

1102

117291

102

119124

1000

ST298

2714

121255

2714

NCR: Yes / No

## WORK ORDER NON-CONFORMANCE / UPDATE

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Supplier <input type="checkbox"/>		Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Other <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Engineering <input type="checkbox"/>															
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Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Supplier <input type="checkbox"/>																
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Other <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data <input type="checkbox"/>									
Equip/Tooling <input type="checkbox"/>									
Operator <input type="checkbox"/>									
Material <input type="checkbox"/>									
Offset/Setup <input type="checkbox"/>									
Other <input type="checkbox"/>									
Process <input type="checkbox"/>									
Supplier <input type="checkbox"/>									
Training <input type="checkbox"/>									
Unauthorized <input type="checkbox"/>									

### FAULT CATEGORY

Landing Gear	Hardware	General
<input type="checkbox"/> Bending Passes Below Min <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimp at Bending <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Other <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Ripples on Inner Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<input type="checkbox"/> Breaking <input type="checkbox"/> Missing <input type="checkbox"/> Size/Length <input type="checkbox"/> Spinning <input type="checkbox"/> Threading <input type="checkbox"/> Wrong  <b>Drill Holes</b> <input type="checkbox"/> Misaligned <input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Undersized <input type="checkbox"/> Too Many	<input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Documentation/Data <input type="checkbox"/> Finish <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Inspection Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Jigs/Fixtures/Tooling <input type="checkbox"/> Kit Incorrect <input type="checkbox"/> Kit Missing  <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Off-Set <input type="checkbox"/> Orientation Misread <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Lost <input type="checkbox"/> Part Moved <input type="checkbox"/> Raw Material
		<input type="checkbox"/> Set-up <input type="checkbox"/> Supplier <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled  <input type="checkbox"/> Other

ITEM	QTY -041	QTY -043	P/N	DESCRIPTION
	X		D4151-041	BASKET FWD HARDPOINT ASSY (LOWER)
		X	D4151-043	BASKET FWD HARDPOINT ASSY (UPPER)
1	2		D4151-1	LOWER HARDPOINT PLATE
2		2	D4151-3	UPPER HARDPOINT PLATE
3	1		D4151-5	FWD BASKET INSTL STUD (LOWER)
4		1	D4151-7	FWD EYEBOLT RECEIVER (UPPER)
5	2	2	AN4C13A	BOLT
6	2	2	MS21043-4	NUT
7	4	4	NAST1149C0432R	WASHER

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER

NO. 85793 MLJ  
12/06/15

RELEASED  
2011-01-28  
JH

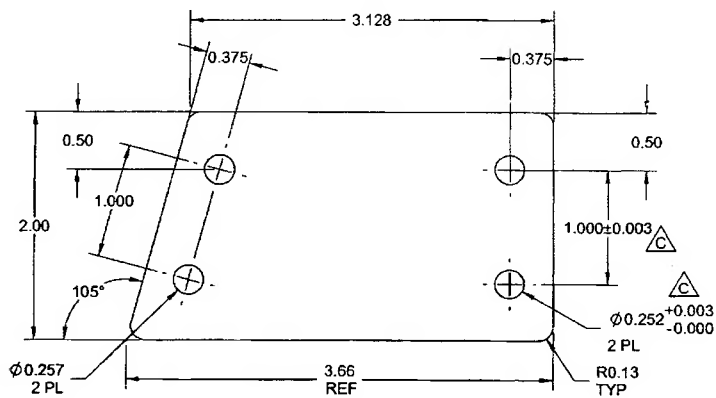
**D4151-043 BASKET FWD HARDPOINT ASSY (UPPER)**

**D4151-041 BASKET FWD HARDPOINT ASSY (LOWER)**

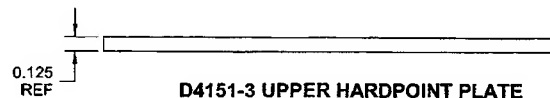
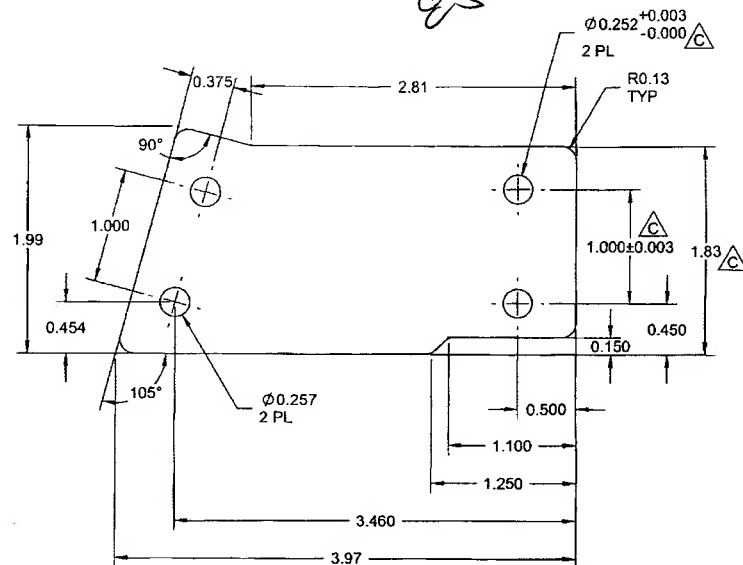
**NOTES:**

- 1) MATERIAL: N/A
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D4151-04X" USING FINE POINT PERMANENT INK MARKER
- 7) WEIGHT:
  - D4151-041 = 0.88 lbs
  - D4151-043 = 1.17 lbs

C	AM4 HARDWARE WAS AN3 (B8-1, C3-1 & D3-1); Ø0.252 WAS Ø0.191 (C5-2, D1-2); TIGHTENED TOL ON 1.000 DIM (C5-2, D1-2, C7-3, C3-3); Ø0.250 WAS Ø0.191 (C6-3, B4-3); 1.83 WAS 1.75 (C1-2), 2.84 WAS 2.76 (B3-3) AND 1.88 WAS 1.80 (C1-3) TO PRESERVE 1.5SD. REASON: SEE D407-797 DESIGN JOURNAL.	MB	10.12.14
B	ADDED D4151-5/7 (SHT 3); D4151-5 WAS D3911-1 (ZN B6-1 & D3-1); D4151-7 WAS D3911-3 (ZN C4-1 & D3-1) ITEMS #5, 6 & 7 REPLACE MS20615-4M20 (ZN C3-1, D3-1 & B8-1); Ø0.191 2 PL REPLACES Ø0.129 3 PL (ZN C5-2); Ø0.191 2 PL REPLACES Ø0.129 4 PL (ZN D1-2). REASON: SEE TR-0350-507-2 REV. B.	MB	10.07.05
A	NEW ISSUE	MB	10.06.22
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	10.12.14		
<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA DRAWING NO. <b>D4151</b> TITLE <b>BASKET FWD HARDPOINT</b> SCALE <b>NTS</b> SHEET 1 OF 3 REV. C COPYRIGHT © 2016 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED IN ANY FORM OR BY ANY MEANS WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.			



**D4151-1 LOWER HARDPOINT PLATE**



**D4151-3 UPPER HARDPOINT PLATE**

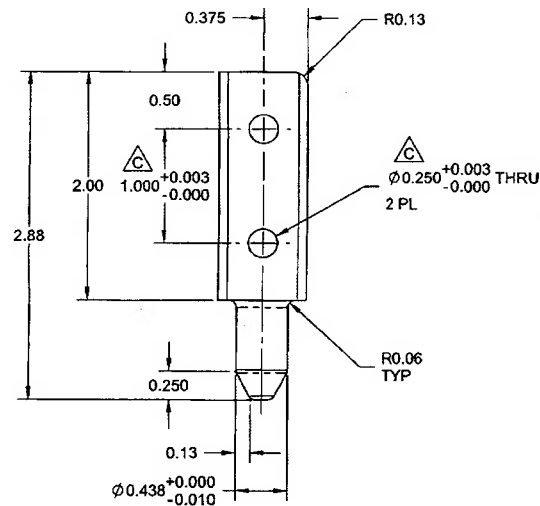
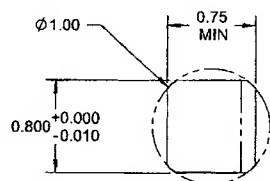
**NOTES:**

- 1) MATERIAL: 303/304/316 STAINLESS STEEL SHEET ANNEALED 2B, 0.125 THK  
PER MIL-S-5059 OR AMS 5513/5524 OR ASTM A240 OR ASME SA240  
REF. DART SPEC. M304S11GA OR M303S11GA
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY AT ASSEMBLY
- 7) WEIGHT:  
- D4151-1 = 0.24 lbs  
- D4151-3 = 0.23 lbs

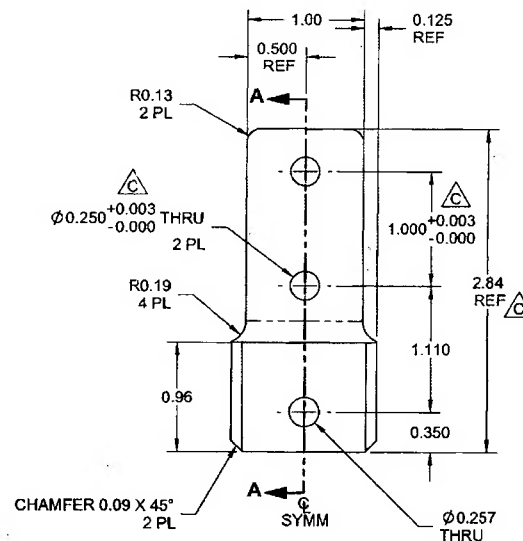
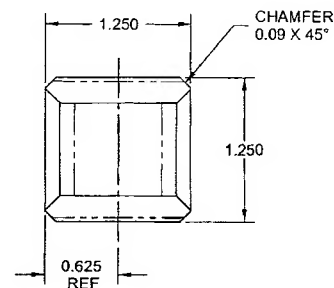
DESIGN		<b>DART AEROSPACE LTD</b>	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. C
MFG. APPR.		<b>D4151</b>	SHEET 2 OF 3
APPROVED		TITLE	SCALE
DE APPR.		<b>BASKET FWD HARDPOINT</b>	NTS
DATE	10.12.14	COPYRIGHT © 2010 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMING OR COMMINGLED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

**RELEASED**  
R 2011-01-18  
JMD

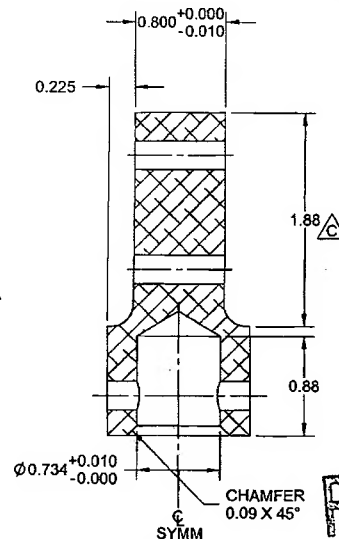




**D4151-5 FWD BASKET INSTL STUD (LOWER)**



**D4151-7 FWD EYEBOLT RECEIVER (UPPER)**



**SECTION A-A**

- NOTES:**
- 1) MATERIAL -5: 303/304/316 STAINLESS STEEL ROUND BAR, PER ASTM A276 OR ASTM A582  
PER DART SPEC M303R OR M304R  
-7: 303/304/316 STAINLESS STEEL BAR, PER ASTM A276 OR ASTM A582  
PER DART SPEC M303B OR M304B
  - 2) FINISH: NONE
  - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
  - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
  - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
  - 6) IDENTIFICATION: IDENTIFY AT ASSEMBLY
  - 7) WEIGHT -5: 0.36 lbs  
-7: 0.70 lbs

DESIGN	15	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	Sc	DRAWING NO.	REV. C
CHECKED		<b>D4151</b>	SHEET 3 OF 3
MFG. APPR.		TITLE	SCALE
APPROVED		<b>BASKET FWD HARDPOINT</b>	NTS
DE APPR.		COPYRIGHT © 2010 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS UNDERSTANDING THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR DISCLOSED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	
DATE	10.12.14		

**RELEASED**  
2011-07-10  
**RELEASED**

